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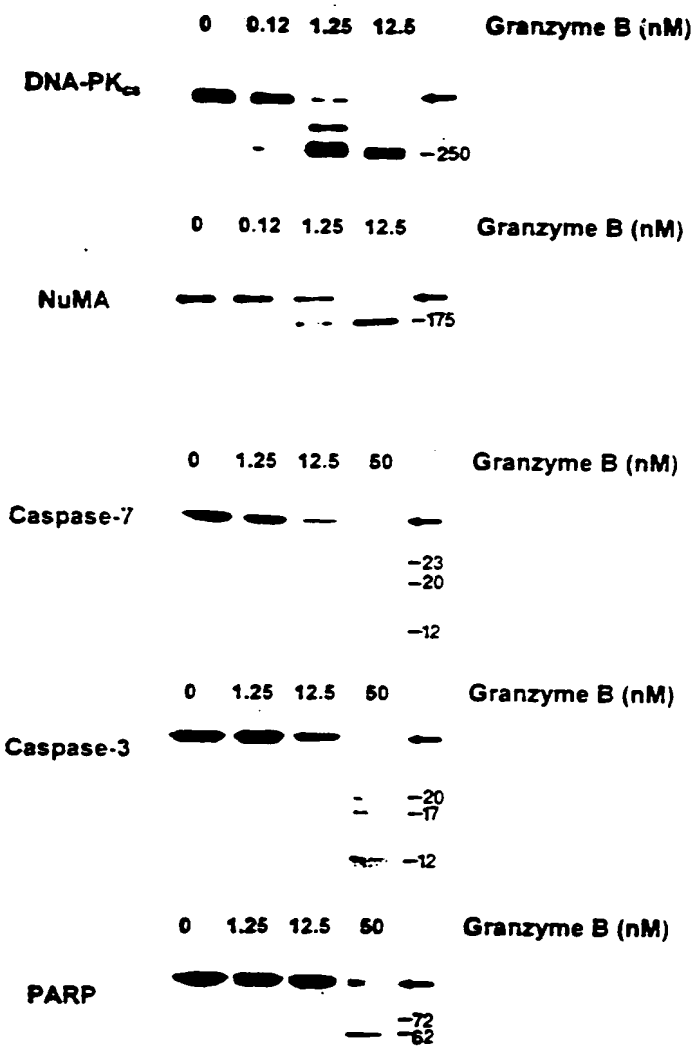
FIC. 1

Fig 1



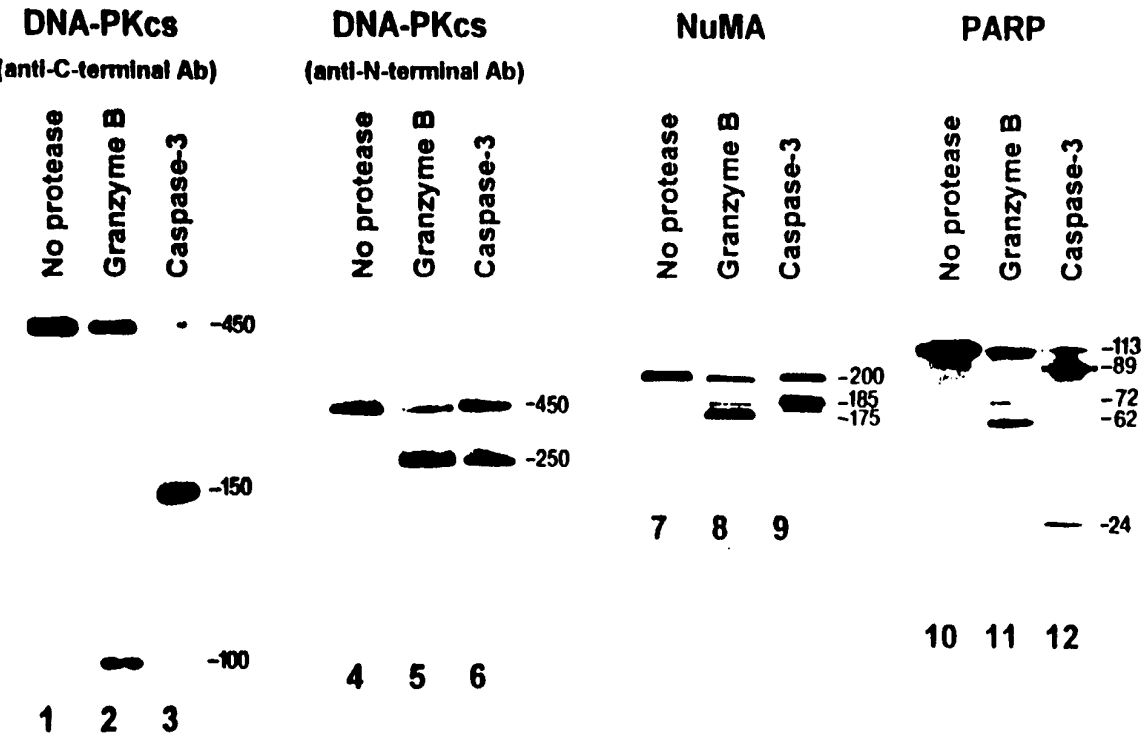


FIG. 2

FIG. 3

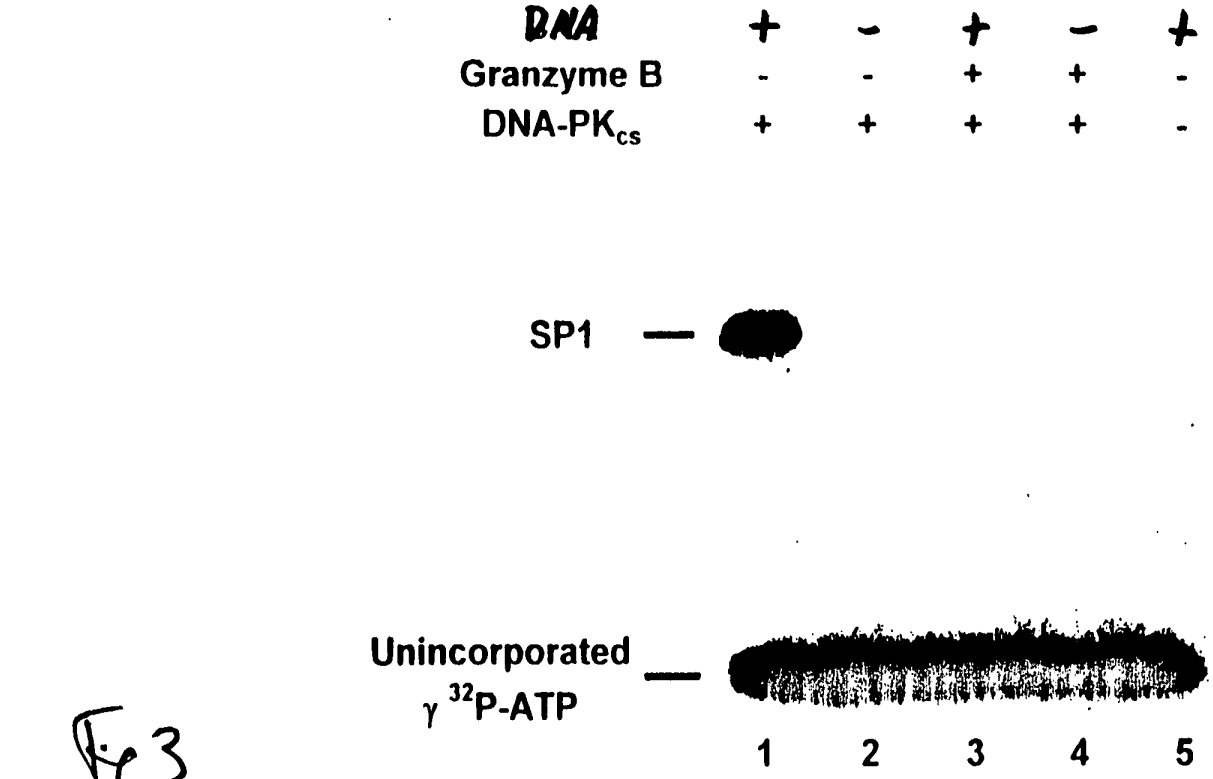


Fig 3

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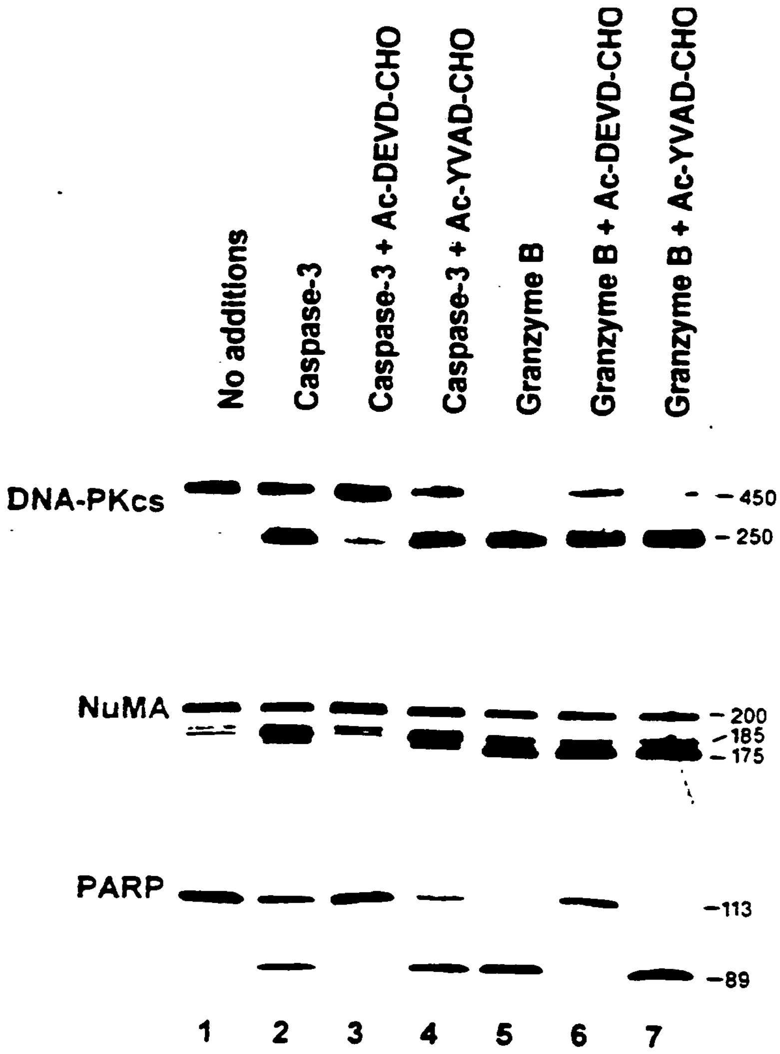
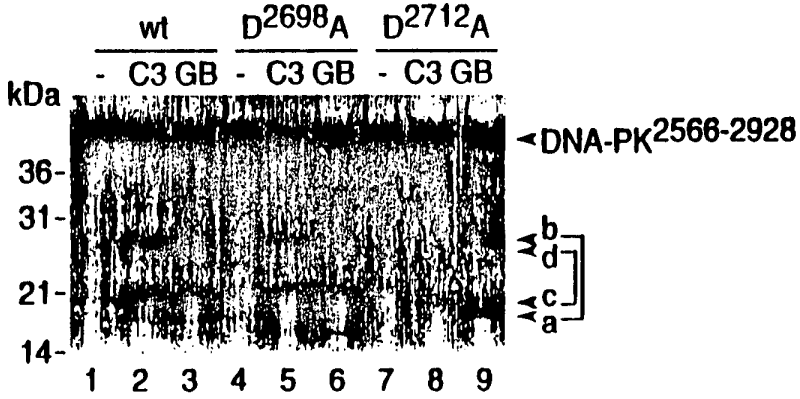
FIG. 4



09299512 .042400

FIG. 5



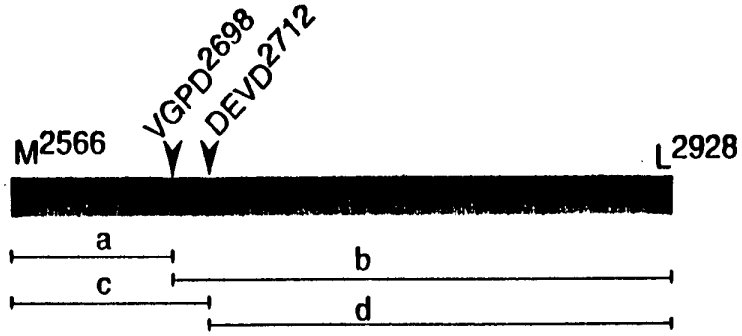


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Fig. 6

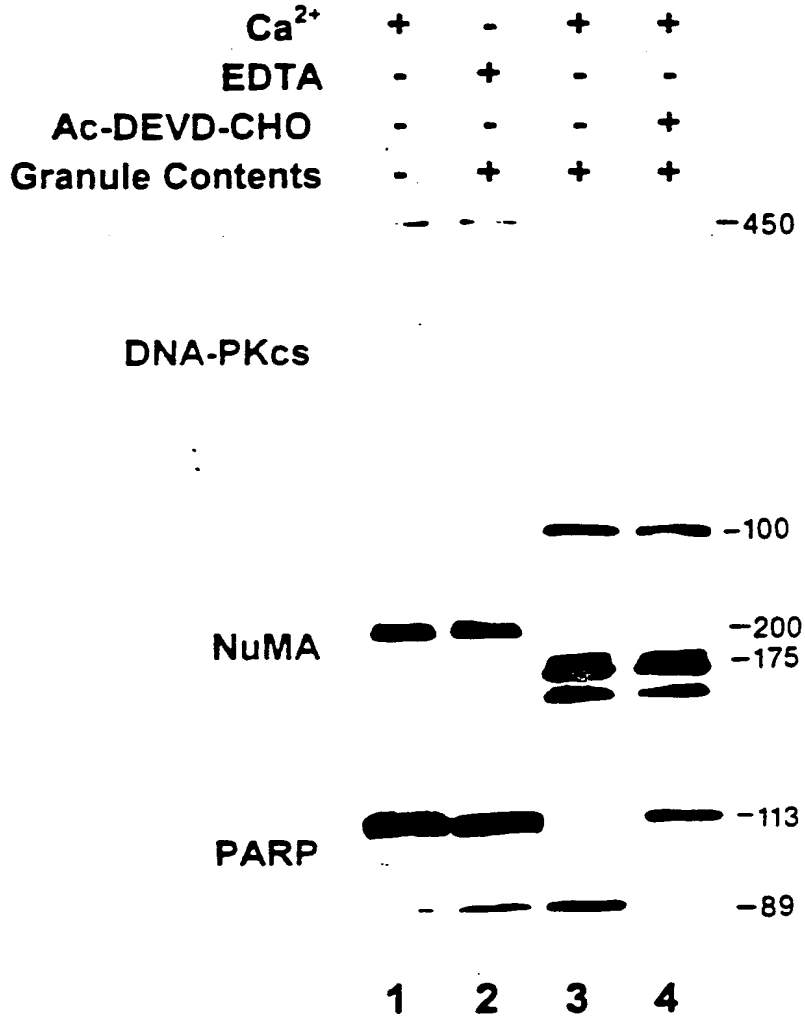

FIG. 7

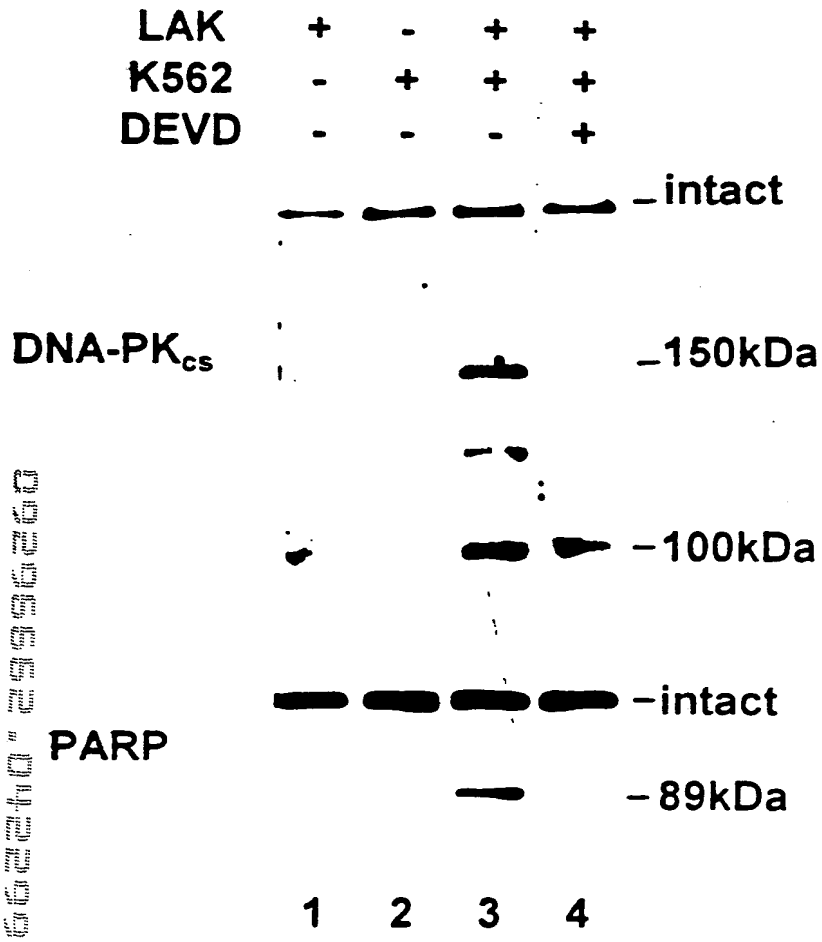
LAK + - + +
K562 - + + +
DEVD - - - +
intact
DNA-PKcs
150kDa
100kDa
intact
PARP
89kDa
1 2 3 4

FIGURE 8

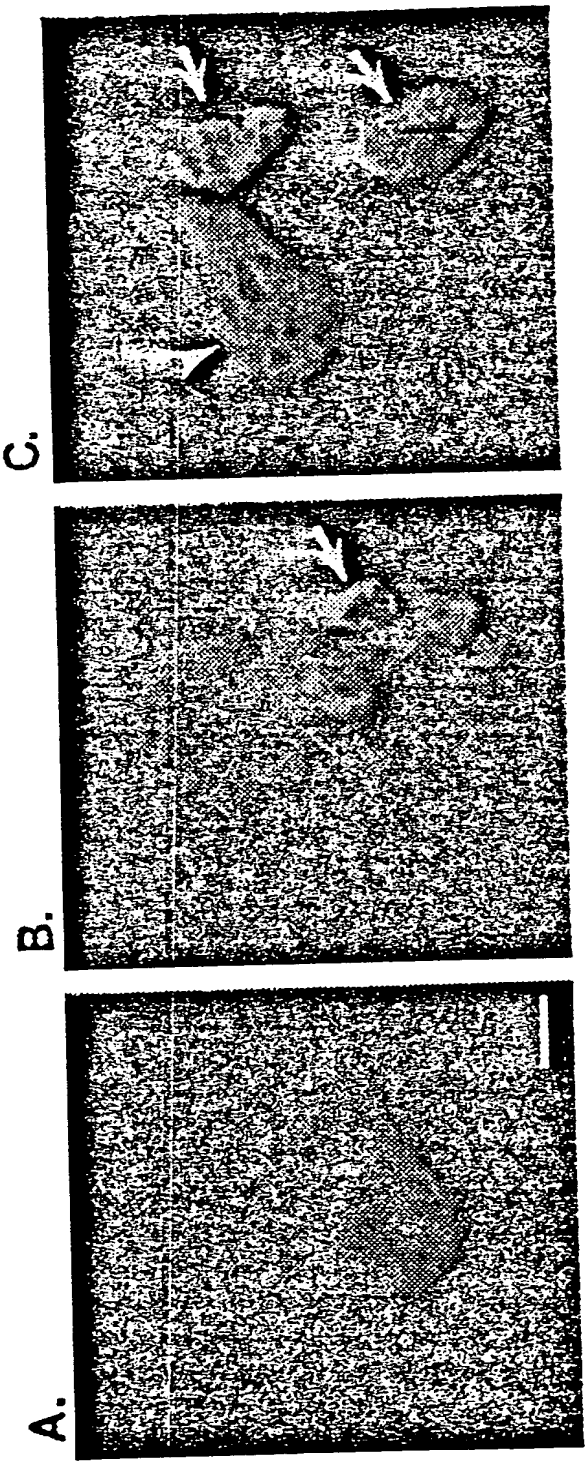

FIG. 9A

LOCUS 284337 2101 aa 12-APR-1996
DEFINITION NuMA protein - human.
ACCESSION 284337
PID g284337
DBSOURCE PIR: locus A42184
summary: #length 2101 #molecular-weight 236296 #checksum 8715.
PIR dates: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 12-Apr-1996.
KEYWORDS .
SOURCE human.
ORGANISM Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (residues 1 to 2101)
AUTHORS Compton,D.A., Szilak,I. and Cleveland,D.W.
TITLE Primary structure of NuMA, an intranuclear protein that defines a novel pathway for segregation of proteins at mitosis
JOURNAL J. Cell Biol. 116 (6), 1395-1408 (1992)
MEDLINE 92176238
REFERENCE 2 (residues 1 to 2101)
AUTHORS Tang,T.K., Tang,C.J., Chen,Y.L. and Wu,C.W.
TITLE Nuclear proteins of the bovine esophageal epithelium. II. The NuMA gene gives rise to multiple mRNAs and gene products reactive with monoclonal antibody W1
JOURNAL J. Cell. Sci. 104 (Pt 2), 249-260 (1993)
MEDLINE 93280231
REFERENCE 3 (residues 1 to 2101)
AUTHORS Harborth,J., Weber,K. and Osborn,M.
TITLE Epitope mapping and direct visualization of the parallel, in-register arrangement of the double-stranded coiled-coil in the NuMA protein
JOURNAL EMBO J. 14 (11), 2447-2460 (1995)
MEDLINE 95300777
FEATURES Location/Qualifiers
source 1..2101
/organism="Homo sapiens"
/db_xref="taxon:9606"
Protein 1..2101
/product="NuMA protein"

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FIG. 9B

1	mtlhatrgaa	llswvnslhv	adpveavlql	qdcsifikii	drihgteegq	qilkqpvser
61	ldfvcsflqk	nrkhpsspec	lvsaqkvleg	selelakmtm	lllyhstmss	ksprdweqfe
121	ykiqaelavi	lkfvldhedg	lnlnedlenf	lqkapvpstc	sstfpeelsp	pshqakreir
181	flelqkvass	ssgnnflsgs	paspmgdilq	tpqfqmrrlk	kqladersnr	delelelaen
241	rklltekdaq	iammqqridr	lallnekqaa	splepkelee	lrdknesltm	rlhetlkqcq
301	dlkteksqmd	rkinqlseen	gdlsfklref	ashlqqlqda	lnelteehsk	atqewlekqa
361	qlekelsaal	qdkkcleekn	eilqgklsql	eehlsqlqdn	ppqekgevlg	dvlqletlkq
421	eaatlaannt	qlqarvemle	tergqqeakl	laerghfeee	kqqlsslitd	lqssisnlsq
481	akeeleqasq	ahgarltaqv	asltselttl	natiqqqdqe	laglkqqake	kqaqlaqtlq
541	qqeqasqglr	hqveqlsssl	kqkeqqlkev	aekqeatrqd	haqqlataae	ereaslrerd
601	aalkqleale	kekaakleil	qqqlqvanea	rdsaqtsvtq	aqrekaelsr	kveelqacve
661	tarqeqheaq	aqvaelelql	rseqqkatek	ervaqekdql	qeqlqalkes	lkvtkgslee
721	ekrraadale	eqqrciselk	aetrslveqh	krerkeleee	ragrkglear	llqlgeahqa
781	etevlrrela	eamaaqhtae	seceqlvkev	aawrdgyeds	qqeeaqygam	fqeqlmtlke
841	ecekarqelq	eakekvagie	shselqisrq	qnklaelhan	laralqqvqe	kevraqklad
901	dlstlqekma	atskevarle	tlvrkageqq	etasrelvke	paragdrqpe	wleeqqgrqf
961	cstqaalqam	ereaeqmgne	lerlraalme	sqgqqqeerg	qqerevarlt	qergraqadl
1021	alekaarael	emrlqnalne	qrvefatlqe	alahalteke	gkdqelaklr	gleaaqikel
1081	eelrqtvkql	keqlakkeke	hasgsgaqse	aagrteptgp	klealraevs	kleqqcqkqq
1141	eqadslersl	eaerasraer	dsaletlqgq	leekaqelgh	sqsalasaqr	elaafrtkvq
1201	dhskaedewk	aqvargrqea	erknslissl	eeevsilnrq	vlekegeske	lkrlvmaese
1261	ksqkleesca	ccrqrqpatv	pelqnaallc	grrcrasgre	aekqrvasen	lrqeltsqae
1321	raeelgqelk	awqekffqke	qalstlqleh	tstqalvsel	lpakhlcqql	qaeqaaaekr
1381	hreeleqskq	aagglraell	raqrelgeli	plrqkvaeqe	rtaqqlraek	asyaeqlsml
1441	kkahgllaee	nrglgeranl	grqfleveld	qarekyvqel	aavradaetr	laevqreaqs
1501	tarelevmta	kyegakvkvl	eerqrfqeer	qkltaqveel	skkladsdqa	skvqqqklka
1561	vqaqggesqq	eaqrfqaqln	elqaqlsqke	qaaehyklqm	ekakthydak	kqqnqelqeq
1621	lrsleqlqke	nkelraeaer	lghelqqagl	ktkeaeqtcr	hltaqvrsle	aqvahadqql
1681	rdlgkfqvat	dalksrepqa	kpqldlsids	ldlsceegtp	lsitsklprt	qpdgtsvpge
1741	paspisqrlp	pkveslesly	ftpiparsqa	plessldslg	dvfldsgrkt	rsarrrttqi
1801	initmtkkld	veepdsanss	fystrsapas	qaslratsst	qslarlgspd	ygnsallslp
1861	gyrpttrssa	rrsqagvssg	appgrnsfym	gtcqdepeql	ddwnriaelq	qrnrvcpphl
1921	ktcyplesrp	slslgtitde	emktgdpqet	lrrasmqpiq	iaegtgittr	qqrkrvslep
1981	hqgpgtpesk	katscfprpm	tprdrhegrk	qstteaqkka	apastkqadr	rqsmafsiln
2041	tpkklgnsll	rrgaskkals	kaspntrsgt	rrspriattt	asaataaaig	atprakgkak
2101	h					

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FIG. 10A

LOCUS 107227 2115 aa10-NOV-1995
DEFINITION NuMA protein - human.
ACCESSION 107227
PID g107227
DBSOURCE PIR: locus S23647
summary: #length 2115 #molecular-weight 238273 #checksum 4391.
PIR dates: 19-Feb-1994 #sequence_revision 10-Nov-1995 #text_change 10-Nov-1995.
KEYWORDS .
SOURCEhuman.
  ORGANISM Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (residues 1 to 2115)
  AUTHORS Yang,C.H., Lambie,E.J. and Snyder,M.
  TITLE NuMA: an unusually long coiled-coil related protein in the mammalian nucleus
  JOURNAL J. Cell Biol. 116 (6), 1303-1317 (1992)
  MEDLINE 92176231
FEATURES Location/Qualifiers
    source 1..2115
    /organism="Homo sapiens"
    /db_xref="taxon:9606"
    Protein 1..2115
    /product="NuMA protein"

FIG. 10B

```
   1 mtlhatrgaa llswvnslhv adpveavlql qdcsifikii drihgteegq qilkqpvser
  61 ldfvcsflqk nrkhpsspec lvsaqkvleg selelakmtm lllyhstmss ksprdweqfe
 121 ykiqaelavi lkfvldhedg lnlnedlenf lqkapvpstc sstfpeelsp pshqakreir
 181 flelqkvass ssgnnflsgs paspmgdilq tpqfqmrrlk kqladersnr delelelaen
 241 rklltekdaq iammqqridr lallnekqaa splepkelee lrdknesltm rlhetlkqcq
 301 dlkteksqmd rkinqlseen gdlsfklref ashlqqlqda lnelteehsk atqewlekqa
 361 qlekelsaal qdkkcleekn eilqgklsql eehlsqlqdn ppqekgevlg dvlqletlkq
 421 eaatlaannt qlqarvemle tergqqeakl laerghfeee kqqlsslitd lqssisnlsq
 481 akeeleqasq ahgarltaqv asltseltt1 natiqqqdqe laglkqqake kqaqlaqtlq
 541 qqeqasqglr hqveqlsssl kqkeqqlkev aekqeatrqd haqqlataae ereaslrerd
 601 aalkqleale kekaakleil qqqlqvanea rdsaqtsvtq aqrekaelsr kveelqacve
 661 tarqeqheaq aqvaelelql rseqqkatek ervaqekdql qeqlqalkes lkvtkgslee
 721 ekrraadale eqqrciselk aetrslveqh krerkeleee ragrkglear lqqlgeahqa
 781 etevlrrela eamaaqhtae seceqlvkev aawreryeds qqeeaqygam fqeqlmtlke
 841 ecekarqelq eakekvagie shselqisrq qnelaelhan laralqqvqe kevraqklad
 901 dlstlqekma atskevarle tlvrkageqq etasrelvke paragdrqpe wleeqqgrqf
 961 cstqaalqam ereaeqmgne lerlraalme sqgqqqeerg qqerevarlt qergraqadl
1021 alekaarael emrlqnalne qrvefatlqe alahalteke gkdqelaklr gleaaqikel
1081 eelrqtvkql keqlakkeke hasgsgaqse aagrteptgp klealraevs kleqqcqkqq
1141 eqadslersl eaerasraer dsaletlqgq leekaqelgh sqsalasaqr elaafrtkvq
1201 dhskaedewk aqvargrqea erknslissl eeevsilnrq vlekegeske lkrlvmaese
1261 ksqkleerlr llqaetasns araaerssal reevqslree aekqrvasen lrqeltsqae
1321 raeelgqelk awqekffqke qalstlqleh tstqalvsel lpakhlcqql qaeqaaaekr
1381 hreeleqskq aagglraell raqrelgeli plrqkvaeqe rtaqqlraek asyaeqlsml
1441 kkahgllaee nrglgeranl grqfleveld qarekyvqel aavradaetr laevqreaqs
1501 tarelevmta kyegakvkvl eerqrfqeer qkltaqveql evfqreqtkq veelskklad
1561 sdqaskvqqq klkavqaqgg esqqeaqrlq aqlnelqaql sqkeqaaehy klqmekakth
1621 ydakkqqnqe lqeqlrsleq lqkenkelra eaerlghelq qaglktkeae qtcrhltaqv
1681 rsleaqvaha dqqlrdlgkf qvatdalksr epqakpqldl sidsldlsce egtplsitsk
1741 lprtqpdgts vpgepaspis qrlppkvesl eslyftpipa rsqaplessl dslgdvfqds
1801 grktrsarrr ttqiinitmt kkldveepds anssfystrs apasqaslra tsstqslarl
1861 gspdygnsal lslpgyrptt rssarrsqag vssgappgrn sfymgtcqde peqlddwnri
1921 aelqqrnrvc pphlktcypl esrpslslgt itdeemktgd pqetlrrasm qpiqiaegtg
1981 ittrqqrkrv slephqgpgt peskkatscf prpmtprdrh egrkqsttea qkkaapastk
2041 qadrrqsmaf silntpkklg nsllrrgask kalskaspnt rsgtrrspri atttasaata
2101 aaigatprak gkakh
```

FIG. 11A

```
LOCUS     1362789    4096 aa                    06-SEP-1996
DEFINITION  DNA-activated protein kinase, catalytic subunit - human.
ACCESSION  1362789
PID       g1362789
DBSOURCE   PIR: locus A57099
           summary: #length 4096 #molecular-weight 465420 #checksum 1795.
           genetic: #gene GDB:PRKDC ##cross-references GDB:234702
           #map_position 8q11.
           PIR dates: 27-Oct-1995 #sequence_revision 27-Oct-1995 #text_change
           06-Sep-1996.
KEYWORDS   DNA binding; DNA recombination; DNA repair; nucleus;
           phosphotransferase.
SOURCE     human.
  ORGANISM  Homo sapiens
           Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
           Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
           Homo.
REFERENCE  1  (residues 1 to 4096)
  AUTHORS   Sipley,J.D., Menninger,J.C., Hartley,K.O., Ward,D.C., Jackson,S.P.
           and Anderson,C.W.
  TITLE     Gene for the catalytic subunit of the human DNA-activated protein
           kinase maps to the site of the XRCC7 gene on chromosome 8
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 92 (16), 7515-7519 (1995)
  MEDLINE   95365397
REFERENCE  2  (residues 1 to 4096)
  AUTHORS   Hartley,K.O., Gell,D., Smith,G.C., Zhang,H., Divecha,N.,
           Connelly,M.A., Admon,A., Lees-Miller,S.P., Anderson,C.W. and
           Jackson,S.P.
  TITLE     DNA-dependent protein kinase catalytic subunit: a relative of
           phosphatidylinositol 3-kinase and the ataxia telangiectasia gene
           product
  JOURNAL   Cell 82 (5), 849-856 (1995)
  MEDLINE   95401275
FEATURES             Location/Qualifiers
    source           1..4096
                     /organism="Homo sapiens"
                     /db_xref="taxon:9606"
    Protein          1..4096
                     /note="DNA-PK-cs"
                     /product="DNA-activated protein kinase, catalytic subunit"
```

FIG. 11B

1 magsgagvrc sllrlqetls aadrcgaala ghqlirglgq ecvlssspav lalqtslvfs
61 rdfgllvfvr kslnsiefre creeilkflc iflekmggki apysveiknt ctsvytkdra
121 akckipaldl likllqtfrs srlmdefkig elfskfygel alkkkipdtv lekvyellgl
181 lgevhpsemi nnaenlfraf lgelktqmts avrepklpvl agclkglssl lcnftksmee
241 dpqtsreifn fvlkairpqi dlkryavpsa glrlfalhas qfstclldny vslfevlikw
301 cahtnvelkk aalsalesfl kqvsnmvakn aemhknklqy emeqfygiir nvdsnnkels
361 iairgyglfa gpckvinakd vdfmyveliq rckqmfltqt dtgdyrvyqm psflqsvasv
421 llyldtvpev ytpvlehlvv mqidsfpqys pkmqlvccra ivkvflalaa kgpvlrncis
481 tvvhqgliri cskpvvlpkg pesesedhra sgevrtgkwk vptykdyvdl frhllssdqm
541 mdsiladeaf fsvnsssesl nhllydefvk svlkivekld ltleiqtvge qengdeapgv
601 wmiptsdpaa nlhpakpkdf safinlvefc reilpekqae ffepwvysfs yelilqstrl
661 plisgfykll sitvrnakki kyfegvspks lkhspedpek yscfalfvkf gkevavkmkq
721 ykdellascl tfllslphni ieldvrayvp alqmafklgl sytplaevgl naleewsiyi
781 drhvmqpyyk dilpcldgyl ktsalsdetk nnwevsalsr aaqkgfnkvv lkhlkktknl
841 ssneaislee irirvvqmlg slggqinknl ltvtssdemm ksyvawdrek rlsfavpfre
901 mkpvifldvf lprvtelalt asdrqtkvaa cellhsmvmf mlgkatqmpe ggqgappmyq
961 lykrtfpvll rlacdvdqvt rqlyeplvmq lihwftnnkk fesqdtvsll eaildgivdp
1021 vdstlrdfcg rcireflkws ikqitpqqqe kspvntkslf krlyslalhp nafkrlgasl
1081 afnniyrefr eeeslveqfv fealviymes lalahadeks lgtiqqccda idhlcriiek
1141 khvslnkakk rrlprgfpps aslclldlvk wllahcgrpq tecrhksiel fykfvpllpg
1201 nrspnlwlkd vlkeegvsfl intfegggcg qpsgilaqpt llylrgpfsl qatlcwldll
1261 laalecyntf igertvgalq vlgteaqssl lkavaffles iamhdiiaae kcfgtgaagn
1321 rtspqegery nyskctvvvr imeftttlln tspegwkllk kdlcnthlmr vlvqtlcepa
1381 sigfnigdvq vmahlpdvcv nlmkalkmsp ykdilethlr ekitaqsiee lcavnlygpd
1441 aqvdrsrlaa vvsackqlhr agllhnilps qstdlhhsvg tellslvykg iapgderqcl
1501 psldlsckql asgllelafa fgglcerlvs lllnpavlst aslgssqgsv ihfshgeyfy
1561 slfsetinte llknldlavl elmqssvdnt kmvsavlngm ldqsfreran qkhqglklat
1621 tilqhwkkcd swwakdsple tkmavlalla kilqidssvs fntshgsfpe vfttyislla
1681 dtkldlhlkg qavtllpfft sltggsleel rrvleqliva hfpmqsrefp pgtprfnnyv
1741 dcmkkfldal elsqspmlle lmtevlcreq qhvmeelfqs sfrriarrgs cvtqvglles
1801 vyemfrkddp rlsftrqsfv drslltllwh csldalreff stivvdaidv lksrftklne
1861 stfdtqitkk mgyykildvm ysrlpkddvh akeskinqvf hgscitegne ltktliklcy
1921 daftenmage nqllerrrly hcaayncais viccvfnelk fyqgflfsek peknllifen
1981 lidlkrrynf pvevevpmer kkkyieirke areaangdsd gpsymsslsy ladstlseem
2041 sqfdfstgvq sysyssqdpr patgrfrrre qrdptvhddv lelemdelnr hecmapltal
2101 vkhmhrslgp pqgeedsvpr dlpswmkflh gklgnpivpl nirlflaklv inteevfrpy
2161 akhwlspllq laasennge gihymvveiv atilswtgla tptgvpkdev lanrllnflm
2221 khvfhpkrav frhnleiikt lvecwkdcls ipyrlifekf sgkdpnskdn svgiqllgiv
2281 mandlppydp qcgiqsseyf qalvnnmsfv rykevyaaaa evlglilryv merknilees
2341 lcelvakqlk qhqntmedkf ivclnkvtks fppladrfmn avffllpkfh gvlktlclev
2401 vlcrvegmte lyfqlkskdf vqvmrhrder qkvcldiiyk mmpklkpvel rellnpvvef
2461 vshpsttcre qmynilmwih dnyrdpeset dndsqeifkl akdvliqgli denpglqlii
2521 rnfwshetrl psntldrlla lnslyspkie vhflslatnf llemtsmspd ypnpmfehpl
2581 secefqeyti dsdwrfrstv ltpmfvetqa sqgtlqtrtq egslsarwpv aggiratqqq
2641 hdftltqtad grssfdwltg sstdplvdht spssdsllfa hkrserlqra plksvgpdfg
2701 kkrlglpgde vdnkvkgaag rtdllrlrrr fmrdqeklsl myarkgvaeq krekeiksel

FIG. 11C

```
2761 kmkqdaqvvl yrsyrhgdlp diqikhssli tplqavaqrd piiakqlfss lfsgilkemd
2821 kfktlseknn itqkllqdfn rflnttfsff ppfvsciqdi scqhaallsl dpaavsagcl
2881 aslqqpvgir lleeallrll paelpakrvr gkarlppdvl rwvelaklyr sigeydvlrg
2941 iftseigtkq itqsallaea rsdyseaakq ydealnkqdw vdgepteaek dfwelasldc
3001 ynhlaewksl eycstasids enppdlnkiw sepfyqetyl pymirsklkl llqgeadqsl
3061 ltfidkamhg elqkailelh ysqelsllyl lqddvdraky yiqngiqsfm qnyssidvll
3121 hqsrltklqs vqalteiqef isfiskqgnl ssqvplkrll ntwtnrypda kmdpmniwdd
3181 iitnrcffls kieekltplp ednsmnvdqd gdpsdrmevq eqeedissli rsckfsmkmk
3241 midsarkqnn fslamkllke lhkesktrdd wlvswvqsyc rlshcrsrsq gcseqvltvl
3301 ktvslldenn vssylxknil afrdqnillg ttyriianal ssepaclaei eedkarrile
3361 lsgsssedse kviaglyqra fqhlseavqa aeeeaqppsw scgpaagvid aymtladfcd
3421 qqlrkeeena svtdsaelqa ypalvvekml kalklnsnea rlkfprllqi ierypeetls
3481 lmtkeissvp cwqfiswish mvalldkdqa vavqhsveei tdnypqaivy pfiissesys
3541 fkdtstghkn kefvariksk ldqggviqdf inaldqlsnp ellfkdwsnd vraelaktpv
3601 nkkniekmye rmyaalgdpk apglgafrrk fiqtfgkefd khfgkggskl lrmklsdfnd
3661 itnmlllkmn kdskppgnlk ecspwmsdfk veflrnelei pgqydgrgkp lpeyhvriag
3721 fdervtvmas lrrpkriiir ghderehpfl vkggedlrqd qrveqlfqvm ngilaqdsac
3781 sqralqlrty svvpmtssdp rappceykdw ltkmsgkhdv gaymlmykga nrtetvtser
3841 kreskvpadl lkrafvrmst speaflalrs hfasshalic ishwilgigd rhlnnfmvam
3901 etggvigidf ghafgsatqf lpvpelmpfr ltrqfinlml pmketglmys imvhalrafr
3961 sdpglltntm dvfvkepsfd wknfeqkmlk kggswiqein vaeknwyprq kicyakrkla
4021 ganpavitcd elllghekap afrdyvavar gskdhniraq epesglseet qvkcimdqat
4081 dpnilgrtwe gwepwm
```

FIG. 12A

LOCUS 130781 1014 aa 01-NOV-1997
DEFINITION POLY (ADP-RIBOSE) POLYMERASE (PARP) (ADPRT) (NAD(+)
ADP-RIBOSYLTRANSFERASE) (POLY(ADP-RIBOSE) SYNTHETASE).
ACCESSION 130781
PID g130781
DBSOURCE SWISS-PROT: locus PPOL_HUMAN, accession P09874
class: standard.
created: Mar 1, 1989.
sequence updated: Dec 1, 1992.
annotation updated: Nov 1, 1997.
xrefs: gi: 510112, gi: 1017423, gi: 190166, gi: 190167, gi: 337423, gi: 337424, gi: 178151, gi: 178152, gi: 190266, gi: 190267, gi: 178188, gi: 178190, gi: 189533, gi: 189534, gi: 35286, gi: 825702, gi: 35288, gi: 189535, gi: 189536, gi: 88229, gi: 88227, gi: 627553, gi: 107162, gi: 107160, gi: 482956, gi: 420073, gi: 107158
xrefs (non-sequence databases): AARHUS/GHENT-2DPAGE 1620, MIM
173870, MIM 173871, PROSITE PS00347, PROSITE PS50064
KEYWORDS TRANSFERASE; GLYCOSYLTRANSFERASE; NAD; DNA-BINDING; NUCLEAR
PROTEIN; ADP-RIBOSYLATION; ZINC-FINGER; ZINC.
SOURCE human.
ORGANISM Homo sapiens
Eukaryotae; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (residues 1 to 1014)
AUTHORS Auer,B., Nagl,U., Herzog,H., Schneider,R. and Schweiger,M.
TITLE Human nuclear NAD+ ADP-ribosyltransferase(polymerizing): organization of the gene
JOURNAL DNA 8 (8), 575-580 (1989)
MEDLINE 90091744
REMARK SEQUENCE FROM N.A.
REFERENCE 2 (residues 1 to 1014)
AUTHORS Uchida,K., Morita,T., Sato,T., Ogura,T., Yamashita,R., Noguchi,S.,
Suzuki,H., Nyunoya,H., Miwa,M. and Sugimura,T.
TITLE Nucleotide sequence of a full-length cDNA for human fibroblast poly(ADP-ribose) polymerase
JOURNAL Biochem. Biophys. Res. Commun. 148 (2), 617-622 (1987)
MEDLINE 88076933
REMARK SEQUENCE FROM N.A.
TISSUE=FIBROBLAST

FIG. 12B

1 maessdklyr veyaksgras ckkcsesipk dslrmaimvq spmfdgkvph wyhfscfwkv
61 ghsirhpdve vdgfselrwd dqqkvkktae aggvtgkgqd gigskaektl gdfaaeyaks
121 nrstckgcme kiekgqvrls kkmvdpekpq lgmidrwyhp gcfvknreel gfrpeysasq
181 lkgfsllate dkealkkqlp gvksegkrkg devdgvdeva kkkskkekdk dsklekalka
241 qndliwnikd elkkvcstnd lkellifnkq qvpsgesail drvadgmvfg allpceecsg
301 qlvfksdayy ctgdvtawtk cmvktqtpnr kewvtpkefr eisylkklkv kkqdrifppe
361 tsasvaatpp pstasapaav nssasadkpl snmkiltlgk lsrnkdevka mieklggklt
421 gtankaslci stkkevekmn kkmeevkean irvvsedflq dvsastkslq elflahilsp
481 wgaevkaepv evvaprgksg aalskkskgq vkeeginkse krmkltlkgg aavdpdsgle
541 hsahvlekgg kvfsatlglv divkgtnsyy klqlleddke nrywifrswg rvgtvigsnk
601 leqmpskeda iehfmklyee ktgnawhskn ftkypkkfyp leidygqdee avkkltvnpg
661 tksklpkpvq dlikmifdve smkkamveye idlqkmplgk lskrqiqaay silsevqqav
721 sqgssdsqil dlsnrfytli phdfgmkkpp llnnadsvqa kvemldnlld ievaysllrg
781 gsddsskdpi dvnyeklktd ikvvdrdsee aeiirkyvkn thatthnayd levidifkie
841 regecqrykp fkqlhnrrll whgsrttnfa gilsqglria ppeapvtgym fgkgiyfadm
901 vsksanycht sqgdpiglil lgevalgnmy elkhashisk lpkgkhsvkg lgkttpdpsa
961 nisldgvdvp lgtgissgvn dtsllyneyi vydiaqvnlk yllklkfnfk tslw